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SPECIAL ISSUE: COMMUNITY MEDICINE

What's in a Name???

GOOD - authentic, honest, just, kind, pleasant, skillful, valid

NEIGHBOR - friend, near

ALLIANCE - affiliation, association, marriage, relationship

CORPORATION - company, business establishment

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COMMENTARIES

MISSSED OPPORTUNITIES, MISSING OPPORTUNITIES AND CLINICAL CREATIVITY

Talking to, or rather listening to one of my patients led me to an epiphany of a sort. It was one of those, “Aha” moments, possibly like Archimedes’ insight into the relationship between weight and volume that led to his “Eureka” and running around town naked. My insight was small, but it led me to ponder, once again, what I am missing in my everyday patient encounters. What disorders, what syndromes, what collections of signs hang together as entities that might shed light on how things either work or fail to work in the brain?

I have spent a fair amount of time wondering how medical knowledge that seems so obvious now was so not obvious until someone pointed it out. We’re not talking theory of relativity here, but things like paralyzed eye movements, dementia, apraxia, and a variety of other neurological signs that are not subtle.

Let me begin with my epiphany. I have maintained an interest in the issue of fatigue in **Parkinson’s disease (PD)** for many years. Fatigue is a very common problem throughout all of medicine, in both otherwise healthy patients who visit their **primary care physician (PCP)** with a complaint of fatigue, in depression, as well as in people with clearly diagnosable medical disorders such as cancer, hypothyroidism, occult infection, anemia, etc. For decades neurologists have had a knee jerk response to the word “fatigue,” which is “multiple sclerosis.” **Multiple sclerosis (MS)** is highly associated with fatigue, but the pathophysiology of that correlation is still a mystery. The fatigue may predate “neurological” symptoms, and thus precede the diagnosis. Fatigue is common in a host of other disorders, and our understanding of it is vague, at best, partly because the physiology seems obvious (e.g., anemia, chronic lung disease) at times, while in some conditions it defies common sense. For example, in people who have recovered from Guillain-Barre syndrome, the ones with the best recoveries are the ones with the most fatigue. In PD, fatigue does not correlate with disease severity.

For a project involving fatigue in PD I started interviewing some PD patients about their fatigue. Unlike the studies I and others have done on fatigue, I simply asked them, in an open fashion to tell me about their fatigue and to answer some of my questions. The formal studies have all used questionnaires which have a number of questions with

numerical answers (e.g., “On a scale of 1-5, how fatigued are you?”). I learned that fatigue varied during the day, increasing for one patient as the day progressed and diminishing for another. I learned that physical exercise made it better, not worse, but that starting to exercise each day was quite difficult.

Since one proven treatment for fatigue in cancer patients is exercise, which has not yet been tried in PD, the observation by the patients is quite stimulating. The question I came up with, my major insight of the year, is, why didn’t I think of interviewing patients in this fashion before? And why hasn’t anyone else either? It appeared suddenly to me that the first thing we should probably do, before we do more epidemiological studies, physiological assessments or randomized double blind controlled treatment trials is interview a lot of PD patients with fatigue and see what they have to tell us. They themselves may come up with the core of a trial design because they are “naive experts.” (They don’t know anything about PD except from personal experience).

This reflection on my own lack of insight then led to the wonderment I’ve had for the past twenty years or so on why an obvious treatment for a difficult problem in PD was overlooked by my European colleagues for over a decade. I am referring to the use of clozapine, the most effective antipsychotic known, albeit plagued by side effects, for drug-induced psychosis in PD. This problem affects 5-10% of drug treated PD patients, and is more devastating than inability to walk, tremor or falling. Although clozapine was used in Europe (not the US) during the 1970s, withdrawn temporarily due to a blood dyscrasia, it was not until 1985 that a paper appeared using clozapine for this problem. And despite the first publication reporting a success, the drug wasn’t taken up for another six years due to efforts in the US before the drug was approved by the FDA for any use at all. Its use in this situation was so obvious, and the effectiveness of the drug so obvious that I am still amazed that no one recognized the importance of this use.

I then got to wondering about **progressive supranuclear palsy (PSP)**, a PD-like illness that often tends to be misdiagnosed as PD. When the first report of PSP was published, a famous New York neurologist opined, “How come they see this in Canada but we

don’t have it here in the U.S.?” But, of course, they did have it in New York, and everywhere else in the western world. What is striking now, is how it could have been missed. These patients have a facial expression quite different than PD in most cases, but more obvious is the weakness of eye movements. This is such an obvious and remarkable problem in most patients (one cannot reliably diagnose this disorder until eye movements are impaired) that it is impossible to miss if one actually examines the patient, even in a cursory fashion.

Cortico-basal ganglionic degeneration (CBGD) is fairly rare, unlike PSP, which is merely uncommon. In a referral center for movement disorders, a handful of CBGD patients will be seen each year. This too is a remarkable disorder, and, like PSP, first described in the 1960s. In a feat of intellectual prowess rarely exceeded, the second case of CBGD was correctly diagnosed in a *New England Journal* CPC about 15 years after the initial three cases were described. How the discussant recalled that case is unknown. Yet, shortly after that CPC was published, and as a direct result, the disorder became a fairly well recognized entity among neurologists, and diagnosed as an uncommon but not amazingly arcane diagnosis.

These observations are, of course, only in my field, but they apply, I’m certain, to all medical fields, and probably all areas of human endeavor. How do we fail to recognize patterns? How do we fail to have insights short of the patient beating us over the head, demanding to know more about their particular problem which we had never heard of before? How did my colleagues and I fail to interview our patients about their fatigue? How did a generation of European neurologists fail to recognize the utility of clozapine? How did neurologists fail to recognize PSP, despite its very distinctive features, or CBGD?

What are we missing today? The nice thing about this question, I’ve discovered from personal experience, is that you don’t have to be either too smart or too creative to answer this. You just need to be curious and attentive. I think that it not only makes us better doctors, but it makes our work a lot more interesting.

-JOSEPH H. FRIEDMAN, MD

THE FOLLY OF DOGMATIC AUTHORITY

Leeches have been used for millennia to serve man's medical needs. Yet it is difficult to imagine a more repellent contrivance presumably to enhance man's health. One has to wonder what motivated the first intrepid soul who sought out this blood-sucking invertebrate creature.

Leeches, as blood-removing, ectoparasitic worms, are mentioned in the earliest clinical records of the Indus Valley and Nile Valley cultures. The Bible, the earliest books of which were gathered by nomadic scribes, provides only a solitary enigmatic mention of the leech, [Proverbs, 30:15] suggesting that leeches were not encountered in the deserts of Sinai. The Greek scientist, Nicandor of Colophon [c.130 CE] cited leeches from India as a means of blood-letting.

As the Galenic concept of disease, with its emphasis on the four humors, prevailed in post-Classical Western Europe, the leech assumed a more critical role in medical therapies. If disease was viewed as the reflection of some internal, humoral disbalance, then blood-letting, by whatever means, seemed to be a rational intervention. Galen [130 – 200 CE], who was personal physician to Marcus Aurelius, had fervently advocated frequent blood-letting by whatever means. Many distinguished 18th Century physicians cut into veins, a process called phlebotomy, to bleed their patients. [George Washington, during his terminal illness, was repeatedly bled.] But other physicians, to accomplish the same therapeutic end, resorted to leeches. A 19th Century textbook of medicine declares that leeches should be used in diseases of the kidney, liver, joints, tuberculosis, epilepsy, hysterics and gonorrhea. There were few diseases in which the use of leeches was contraindicated. Barber-surgeons called it leeching, but the more authoritative university-trained physicians, who employed leeches just as readily, referred to it as *bdellotherapy* [*bdella* being the Greek word for the leech.]

The leech [*Hirudo medicinalis*] is closely related to the earthworm. Both are segmental annelids moving about by undulating accordion-like movements. Medicinal leeches are free-living worms with muscular bodies, generally about 3 inches in length, although some leech species measure up to 18 inches. They are globally distributed but are concentrated in damp or swampy regions such as rain forest or warm bodies of shallow water. The leech has suckers at both ends of its somewhat tubular body: the rear suckers anchor itself, while the front suckers are provided with small teeth, thus allowing the leech to cut into the skin of the victim before withdrawing blood. Leech saliva contains an anesthetic agent which masks the pain of the incisions. Leech saliva also contains an anticoagulant substance which prevents the extracted blood from clotting.

Leech-collecting was an unaesthetic, somewhat hazardous occupation. Young men would immerse themselves in leech-infested swamps, wait perhaps an hour, and then return to dry land, hastening to the nearest barber-surgeon, who would remove the many leeches firmly attached to the leech-gatherer's skin. Besides a multiplicity of skin wounds, all of them bleeding excessively, the hunter would have also lost a fair amount of his blood since each

leech engorges itself with human blood up to five times its body weight. By the 19th Century, the medicinal demand for leeches was so great [Paris alone used many millions per year] that leech-harvesting became a thriving industry in the Russian Caucasus. Leeches were harvested from designated wetlands by sending bare-legged children to wade through the swamps.

By tradition, leeching was supervised by the barber-surgeons. When a customer needed blood-letting, the barber-surgeon brought a cluster of leeches in a wine glass, which was inverted over the arm-skin of the patient. The leech, when sated, absorbed about a half-ounce of blood. But when the leech dropped off, the wound generally continued to bleed, and the surgeon then applied a compress soaked in brandy.

Leeches, for unknown reasons, would sometimes refrain from blood-sucking. To overcome this reluctance, folklore dictated that the skin of the patient first be soaked with beer, garlic or sour cream. German scientists recently attempted controlled experiments and found that beer, in fact, diminished the hunger for blood-letting while garlic generally killed the leeches.

Blood-letting, whether by phlebotomy or by the use of leeches, gradually faded from medical practice. By the early decades of the 20th century, physicians regarded the process with bemusement or ill-concealed contempt.

Biologists, both in England and Russia, isolated an anticoagulant chemical from the leech saliva, calling it *hirudin*, thus encouraging intensive research into the physiological mechanisms of clotting. And, more recently, leeches are now used as adjuvants in tissue graft and limb-reattachment reconstructive surgery. Limbs that had been accidentally severed are now reattached by skilled surgeons who rejoin the lacerated arteries. The re-establishment of the return flow of blood via veins, however, is technically more difficult and the surgeons sometimes are confronted with pooling of blood, causing a secondary compromise of the arterial blood supply. Applying leeches to the region often reduces the pressure caused by the pooled blood and facilitates the re-establishment of a functional blood circulation. The US Food and Drug Administration, heeding the re-employment of the once-despised leech, has declared it a legitimate medical device, albeit with a very limited use.

Leeching has come a long way since its role in Renaissance medicine. A standard textbook of that era, by Cintio D'Amato [Venice, 1660], declares emphatically that diseases of the spleen require that the bleeding be performed on the left arm, while diseases of the liver – of which there were many – be treated by bleeding from the right arm. The text further emphasizes the need for absolute assertiveness by the practitioner.

In a more credulous past, bloodletting was declared to be a wondrous intervention. It took centuries to demonstrate that indiscriminate bloodletting actually hastened the death of many patients. And it took even longer for the medical profession to become wary of those practitioners whose sole merit had been the courage of their convictions.

- STANLEY M. ARONSON, MD

INTRODUCTION

VINCENT MOR, PHD

This issue contains articles from several recent graduates of Brown's new Masters of Public Health degree program and one paper that is an outgrowth of a Brown medical student's project initiated while participating in the Department of Community Health's required Community Health Clerkship. In both instances, these articles provide an insight into the different public health-related activities in which our students are engaged.

Drawing upon recent history and a study undertaken by Brown faculty member Susan Allen, Dr. Dannie Ritchie's paper tells the sad story of the demise of the Harvard Pilgrim health plan here in Rhode Island from the doctors' point of view, pointing out the implications of the shift from population medicine that has occurred in staff practice HMOs to a commercial insurance model. Dr. Emma Simmons raises the critical question of when, how and whom to screen for HIV, arguing that universal screening for rare conditions occurs routinely in other areas and may be a good way to avoid the current biased approach to offering HIV testing which leaves many untested who could benefit from early

treatment. Ms. Baier summarizes her work examining nursing home quality rankings at Rhode Island Quality Partners while doing her MPH. Under the tutelage of the current Director of the Rhode Island Department of Health, Dr. David Gifford, Ms. Baier notes that while many consumers might like to rank nursing homes in terms of their overall quality, the data don't conform to that one-dimensional perspective. Finally, Dr. Mike Mello and his colleagues, including a Community Health Clerk, make the linkage between the Emergency Department and public health by estimating the age-specific rate of bicycle-related traumatic brain injury. Dr. Mello and his colleagues note that both in Rhode Island and nationally, middle school boys between 10 and 14 have the highest incidence of these injuries; the authors suggest strategies for intervening to reduce these rates.

What is fascinating about these papers is the diversity of public health practices that they represent. From the organization of health care and its effect on the physician work force to the classic public health approach of using surveillance data on injuries to

design an educational intervention, these papers reveal that public health is alive and well in Rhode Island. The strong linkage that the Department of Community Health and the Brown Medical School has forged with the Rhode Island Department of Health and other state and quasi-governmental public health agencies means that our students will continue to produce work that is relevant to our community and to the nation.

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THE IMPACT OF THE CLOSURE OF HARVARD PILGRIM HEALTH CENTER OF NEW ENGLAND ON PRIMARY CARE PHYSICIANS: IMPLICATIONS FOR QUALITY OF SERVICES

DIANNE CATHERINE RITCHIE, MD, MPH, AND VINCENT MOR, PHD

With two months notice, **Harvard Pilgrim Health Care of New England (HPHC-NE)** closed on December 31, 1999, due to financial insolvency. As a Rhode Island institution, HPHC-NE, a non-profit mixed model HMO, had the reputation for high quality and affordability. Originating in the 1970s, it was both an insurer and provider. It prided itself on its local origins, community service and commitment.¹ Its closure disrupted a long-standing institution whose many patients lost their insurance and providers and whose providers lost their practices. The event garnered extensive news coverage and required the state's department of business regulation to become involved to protect the public.

HPHC-NE, the Rhode Island subsidiary of Boston-based **Harvard Pilgrim Health Care (HPHC)**, evolved from a staff/group model HMO to a mixed staff and network **managed care organization (MCO)**. HPHC-NE originated in the 1970s as the **Rhode Island Group Health Association (RIGHA)**.

HCHP was established in 1969 and affiliated with RIGHA in 1990.² Both RIGHA and HCHP began as staff/group models with community orientations. This model was consistent with the intent of the 1978 HMO Act, which was intended to promote a proactive health care delivery model and which was fueled by the success of staff/group model HMOs with a preventive health care emphasis.³⁻⁷ With the change in policies and adaptation to pressures to increase market shares and to be competitive,⁸⁻⁹ HCHP merged with Pilgrim Health Care in 1994.¹⁰ The Rhode Island subsidiary became HPHC-NE. At the time of its closure, HPHC-NE consisted of five staff model care centers and an extensive network of providers throughout the state, serving approximately 177,000 insured residents.

This paper summarizes the results of a survey administered to staff(salaried) and network(contract) physicians undertaken a year following the close, focusing on physicians' perceptions of how the HPHC-NE closure affected their confidence and belief in the US health care delivery and financing system.¹

METHODS

The Rhode Island **Department of Health (DOH)** provided the research team with access to HPHC-NE electronic data files used to identify the primary care physicians sample. Primary care physicians were defined based on the American Medical Association definition: **Family Practice (FP), Internal Medicine (IM), Obstetrics/Gynecology (OB/G), and Pediatricians (P)**, which is also consistent with the **Institute of Medicine's (IOM)** classification.¹¹ A mail survey was sent to 100% of staff physicians (N=91) and a random stratified sample of network (N=138) physicians. We followed up with telephone calls. Questions addressed demographics, changes in practice and/or career, and opinions about the US health care system. Analyses

are reported using univariate and bivariate.

RESULTS

The overall response rate, adjusted for non-locatable respondents and considering replacement sampling, for both groups of physicians was 75.9%. Eighty-seven percent of the staff physicians responded.

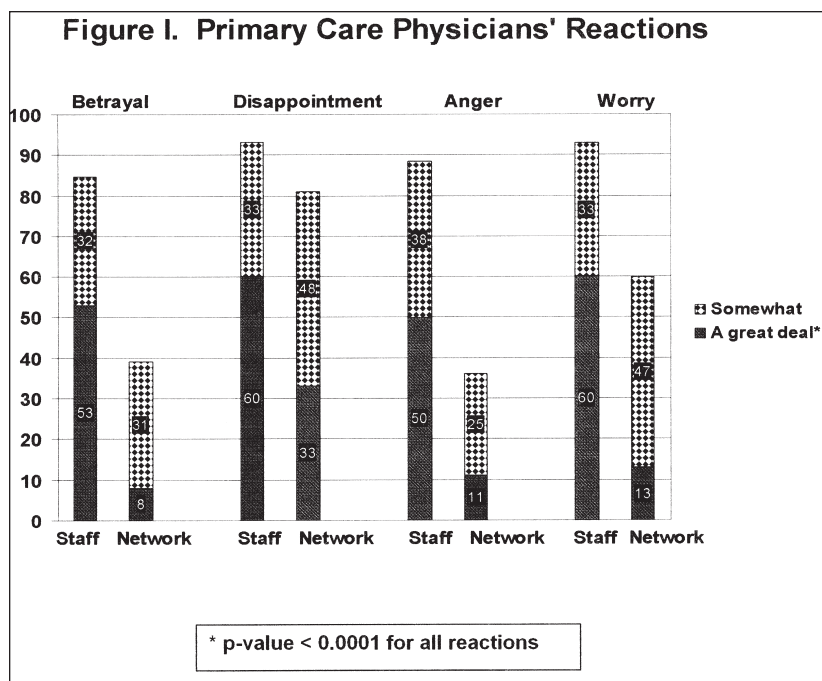
Physician demographics of the staff and network physician respondents are summarized in Table 1. The sample is 62% male, 90% white and an average age of 45. The median age of the staff and network physicians was 47 and 44 respectively.

The sample was relatively evenly divided between staff (48%) and network (51%). Internal medicine primary care physicians were more heavily represented in both groups but were a much larger percent of the staff physicians (44% as opposed to 29% of the network physicians). More than 80% of the staff physicians were with HPHC-NE for five years; for 1/3 it was 15 years or more. The majority of network physicians, 69%, worked for HPHC-NE for less than five year.

Physicians' reactions to the HPHC-NE closure can be seen in Figure I. Four

Table 1. Physician s' Sample Demographics (n=126)

Physician Type	Staff %	Network %	Year(s) as HPHC-NE Physician	Staff %	Network %
	48.4	51.6	< 5	16.4	69.2
Sex			≥ 5 < 15	49.2	30.8
Male	60.7	63.1	15 +	34.4	0
Female	39.3	36.9			
Race/Ethnicity			Physician Specialty		
White	94.7	86.7	Family Physicians	24.6	21.5
African American	0	5	Internists	44.2	29.2
Hispanic	0	3.3	Pediatricians	19.7	27.7
American Indian/Alaska	0	0	Ob/Gyn	11.5	21.6
Asian/Pacific Islander	3.5	0	Median age		
Mixed Heritage	0	1.7		47	44
Other	1.8	3.3			



of the closed-ended reactions asked about betrayal, disappointment, anger and worry. Fifty percent or more of the staff physicians reported a great deal of betrayal, disappointment, anger and worry while this was true for only 1/3 or less of the network physicians ($p < 0.0001$). Staff and network physicians reported comparably moderate levels of disappointment and worry about the closure, with greater than 50% of both physician groups noting that they were somewhat to a great deal disappointed and worried.

Figure II summarizes respondents' opinions, post-closure, about the US health care system.. Physicians were asked whether they were more or less in favor of the current system, government-sponsored health care, unionization of health care providers and for-profit health care, or had no change in opinion. Seventy-five percent of staff and 45% of network physicians reported a less favorable opinion of the US health care system; nobody reported a more favorable opinion. More than 30% changed to a less favorable opinion toward for-profit health care and over one quarter of physician were more in favor of unionization of health care providers. And 52% staff and 29% network physicians now favored government-sponsored universal health care.

In open-ended questions, 80% of staff physicians, as opposed to 21% of network physicians, expressed additional opinions. Forty percent of the staff responses were superlatives, expressions about how wonderful HPHC-NE had been. Of those responses over 60% described the HPHC-NE health care system as one that provided superb to excellent quality of care. Twenty-five percent described it as comprehensive/collegial and/or collaborative.

SUMMARY

We describe Rhode Island physicians' perceptions of how the HPHCNE closure affected their confidence and belief in the structure of the US health care delivery and financing system. Staff physicians described the HPHC-NE health care organization as an ideal, collaborative, comprehensive system that provided good quality care. The closure seems to have affected how physicians felt about the US health care system in general: 50% or more of the staff physicians characterized their reaction to the closure as one of betrayal, disappointment, anger and worry; 75% of staff and 45% of network physicians reported having a less favorable opinion of the United States health care system since the closure; a significant minority favored unionization. The staff and network physicians reacted personally

to the closure, but their reactions affected their broader view of the health care system and financing negatively.

DISCUSSION

The IOM defines the essence of primary care as "the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community... Integrated is intended...to encompass the provision of comprehensive, coordinated, and continuous services that provide a seamless process of care."¹² While the closure of a health plan impairs access and promotes discontinuity, this disruption also undermines the core of primary care and possibly physicians' morale.

Shortell et al. define the concept of physician-system alignment: "the degree to which physicians and an organized delivery system share the same mission and vision, goals and objectives, and strategies, and work toward their accomplishments".¹³ Burns et al. note that physicians who receive a salary or stipend or both expressed greater physician-system alignment.¹⁴ While both staff and network physicians' confidence and belief in US health care system were negatively affected, staff physicians' negative reactions were more prevalent and stronger. We argue that the differential impact of closure on physicians' attitudes is partially attributed to differences in philosophical view-point.

One question from this study is the impact on current and future medical care quality, a topic rarely examined in the study of closures of health organizations. The literature suggests that quality of care is affected by physician burnout and turnover through the disruption to continuity of care¹⁵ and through the potential for inappropriate dispensing of prescriptions, poor communications, patients' adherence and patients' perception of quality and, in turn, health outcome.^{16,17} Dissatisfied primary care physicians are more likely to report difficulty in caring for patients.¹⁸

The potential impact of volatile physician employment practices on the quality of care raises concerns for health care organizations and regulators. While it was beyond the scope of this study, we would argue that it is also important to consider how the disruption of physicians' practices can secondarily affect quality of care.

Our cross-sectional analysis relied upon an untested survey instrument. The lack of literature on the topic provided little guidance for designing the survey. Furthermore, the retrospective nature of the study meant we had no baseline assessments of attitudes against which to compare changes. However, open-ended, qualitative responses provide reasonable assurance that baseline opinions about HPHC-NE were very positive.

The fact that staff physicians lost their practices, their livelihood and identity, impacted their reactions. The longevity of this group could explain their loyalty and disappointment at closure of their workplace rather than the fact that it was a staff practice HMO. However, here the qualitative responses described the quality of the HPHC-NE health care organization as ideal or excellent, which suggest that their longevity was more probably due to professional satisfaction.

Because we could not measure the

baseline opinions of the physicians, we are not able to determine whether physicians initially had favorable or unfavorable opinions of the health care system. What is impressive was the general movement in opinion that respondents attributed to the closure. In particular, the response to the question about for-profit health care (HPHC-NE was a non-profit organization) could reflect the belief that the rise in for-profit health care spurred the competitive mergers of nonprofit HMOs.¹⁹

The demise of HPHC-NE should encourage policy-makers to consider what constitutes a successful health care delivery system. They need also to ask what determines an HMO's success; is it market viability or quality of care? If it is quality of care policy makers must consider how shifts in organizational systems produce shifts in confidence and satisfaction in the physician workforce and how this may affect the quality of service delivery.

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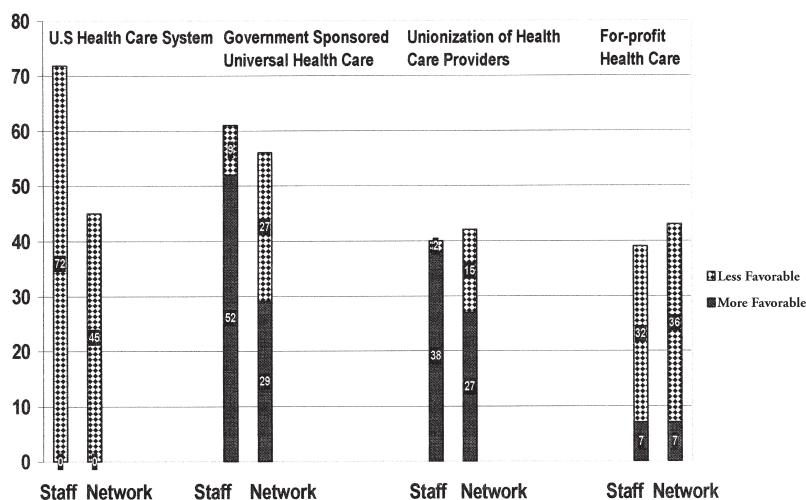
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Figure II. Changes in Physicians' Opinions about the US Health Care System as a Result of the Closure



DISTRUST OF THE MEDICAL SYSTEM PERSISTS: IMPLICATIONS FOR ROUTINE HIV TESTING

EMMA SIMMONS, MD, MPH

The majority of adults in the United States have never been tested for HIV infection.¹ Gender, age, race, education, sexual orientation and geographic location have been identified as factors influencing the likelihood that people will seek testing.² Fear of a positive test result and a consistent underappreciation of HIV risk are two of the reasons cited for refusal to test.³ Mistrust of the medical system, attitudes, and stigma may also influence the willingness to undergo HIV testing. Research has shown that minorities, in particular Blacks and Latinos, are more likely to test later in the course of their HIV infection.⁴

BACKGROUND

Twenty years into the epidemic, HIV/AIDS continues to affect many in the United States. Recent estimates suggest that there are upwards of 950,000 people in the United States who are HIV-infected, with approximately 30% unaware of their HIV status.⁵ Nationally, HIV infection is increasing most rapidly among heterosexuals who underestimate their risk.⁶ The HIV incidence has been stable at 40,000 cases/year for the last five years.⁷ In **Rhode Island (RI)**, there have been an average of 130 new cases of HIV since the inception of the unique identifier coding system in 2000.⁸

In RI, as nationally, African Americans and Latinos are disproportionately affected with HIV disease. The incidence rate of 9.7 per 100,000 documented in Blacks in RI is seven times that of Caucasians. AIDS was the third leading cause of death for Blacks in RI in the previous five years. AIDS was the fourth leading cause of death among Hispanics, the largest minority group in RI, in the last reporting period. Among the Latino population, AIDS incidence is four times higher than the incidence for the state as a whole.⁸

Few studies have been published on routine testing for HIV.^{9,10} Even less is known about how underserved minorities feel about routine testing for HIV, especially in the outpatient setting. This cross-sectional quantitative survey of patients, predominately from underserved minority backgrounds, attending low-income urban primary care health centers in Providence, was conducted over a four-month period. The purposes of this study were: to assess patients' (1) knowledge about HIV and AIDS, (2) attitudes towards routine HIV testing in the primary care setting and (3) common myths, perceptions and beliefs about HIV/AIDS. An article¹¹ focused on the knowledge and attitudes towards routine testing and demonstrated that patients prefer routine testing offered by their primary care providers; this manuscript will focus on the myths and perceptions towards HIV and AIDS.

METHODS

An anonymous, self-administered cross-sectional survey of primary care outpatients was conducted at a group of community health centers affiliated with **Providence Ambulatory Community Health Centers, Inc (PACHC)** from April until August 2002.

A convenience sample of 101 respondents attending the health centers was obtained. This number was chosen for logistical and practical reasons. There were financial limitations so that the only interviewer was this author and there was a cap on the number of participants who could be compensated for their time for participation in the survey. PACHC clinics were chosen because they are busy multi-disciplinary sites that serve primarily impoverished minorities in a primary care setting.

A single recruiter approached all adult patients in the waiting rooms of the clinic. Respondents completed a 45-item pen-and-paper instrument with questions on demographics,

personal risk factors, as well as beliefs, attitudes, and knowledge about HIV/AIDS. The Flesch-Kincaid grade level for the questionnaire was 5.9. The instrument was self administered anonymously for 98% (99/101) of the respondents. To include those Latinos who were unable to read English, the questions were translated into Spanish. An independent interpreter checked the translation of the original instrument for accuracy/readability. All clinic sessions (morning, afternoon and evening) were visited; however, the majority of interviews were done in the afternoon due to the increased number of appointments scheduled/patients in the common waiting areas during these hours. In an effort to reduce the stigma associated with asking a patient to participate in a survey about HIV, the interviewer approached all adult patients in the waiting room. The only exclusion criteria for participation were age less than 18 years old and inability to speak/read either in Spanish or English. Patients were compensated with a \$10.00 gift certificate to a local supermarket. The response rate (excluding those unable to complete secondary to language barriers) was greater than 90%. The survey was conducted after approval by Lifespan's institutional review board and the PACHC review board.

RESULTS

There were 101 participants in this study. (Table 1) The majority of the respondents were female and from an underrepresented minority population. The mean age of the respondents was 34 (STD 13). The mean age for males was 36 and for females was 34. Forty-two percent of the sample was married; 35%, never-married. Three quarters of the respondents were employed.; 72% had health care coverage. Forty-eight percent of the males in our sample were uninsured compared to 21% of the females ($p < .05$). Three quarters of the participants had a high school

education. Over three-quarters (76%) had been previously tested for HIV.

KNOWLEDGE, ATTITUDES AND BELIEFS

Almost seventy percent (69%) of the respondents stated that they did not know anyone with HIV or AIDS. The vast majority (94%) of the participants would want to know if they had HIV infection. Sixty-three percent (63%) believed that current HIV therapy was effective, but not curative of the virus that causes AIDS whereas 9% thought an actual cure existed and 6% thought that current medications were totally ineffective in controlling HIV.

An almost equal percentage of respondents felt completely (31%), somewhat (26%), or not (28%) very confident of getting the best available treatment for HIV and AIDS. Six percent weren't confident at all that they could get the best available therapy if they were diagnosed with AIDS.

With regard to other attitudes or beliefs, 65% of the respondents felt that their family or friends would abandon them if they found out that they were HIV-infected. Although 26% felt that they could tell if someone had AIDS, only 2% answered that HIV could be contracted if one was dirty or unclean. Almost half (49%) of the respondents thought it would be easier for a homosexual to get HIV than a heterosexual person. Fifty seven percent of the Latino respondents thought that homosexuality correlated to easier infectivity for HIV. Twenty eight percent of all the respondents believed in the genocide theory of AIDS as assessed by the following question: *Do you think the virus that causes AIDS was started deliberately to kill an entire race?* None of the 14 whites believed in this genocide theory, while 26% of Latinos and 50% of Blacks believed that there was such an HIV conspiracy to eliminate a race of people. This genocide theory was statistically significant for the African Americans compared to whites in the sample. ($p=.002$) There was also a trend towards significance for the belief that governmental played a role in the origins of HIV in America: 29% of respondents believed that the

government was responsible for causing some people to be infected.

Eighty one percent of the participants had heard of the Tuskegee Syphilis experiment; 87.6% believed that HIV was a punishment from God or another spiritual authority. Blacks were more likely to ascribe to this punitive belief than were whites ($p=.087$). Most respondents acknowledged that they received their information about HIV from the television or radio (66%). Books, popular magazines, friends and religious leaders were other sources of information at 45.5%, 17.8%, 13%, and 5%, respectively. Sixteen percent of the respondents selected a different source of primary HIV information other than those listed. The blacks/African Americans in the sample were more likely to get information from the radio or from books ($p=.026$ and $.027$ respectively).

LIMITATIONS

The convenience-based nature of sampling was the major impediment to generalizability in this study. Although the entire questionnaire asked sensitive questions, the ordering of the questions might have produced different results for analysis. Although the two open-ended questions that were positioned at the end of the questionnaire did provide some recurring anecdotes, most of the answers could not be summarized into a "clean" summary.

Another limitation to the analysis is the fact that no white males participated in the survey. Although there were few males who appeared to be white in the clinics, it limits our ability to generalize our findings to white males. The small sample size prohibited more detailed analysis and segmentation of the responses.

DISCUSSION

The HIV epidemic remains unchecked in the US. Despite campaigns by governmental and private organizations, distrust and pockets of misperceptions and myths about HIV remain. Our respondents were a relatively stable, educated group of people with health coverage; however, over half felt unable to access the best

treatment for HIV and AIDS. This perception of being unable to get the best treatment, perception of lack of effectiveness of treatment, fear of abandonment by friends and family and/or knowledge of the Tuskegee Syphilis experiment (a marker of distrust of the medical establishment) did not appear to limit the participants' willingness for previous HIV testing. The self-reported HIV testing rate for our respondents was almost double that of the national average.

Although HIV and AIDS are disproportionately prevalent in Blacks and Latinos both locally and nationally, 70% of our respondents did not know anyone with AIDS or HIV. Eighty-eight percent felt that AIDS was a divine punishment. This punitive conviction may have contributed to participants' response that they would be scorned by loved ones if they were HIV-infected. This could potentially lead to either refusal to test or late testing in some individuals.

Over one quarter of our respondents believed that AIDS was a deliberate plot by the government or some other authority to eliminate a certain race or ethnic group. None of the whites or Asians believed in the genocide theory. A quarter of Latinos and half of the Blacks in our survey felt this to be true. This is consistent with other studies that show many educated Blacks believe that AIDS is a form of genocide.¹² This belief may present a barrier to consistent condom use and/or early testing for HIV in some populations.

Another testing option needs to be explored to try to counterbalance some of the problems with HIV testing. Many agree that targeted testing is stigmatizing and serves as a barrier to earlier identification and testing for HIV. Blacks and Latinos disproportionately distrust the research and medical community.¹³ Targeted testing can be misconstrued as being a direct extension of discrimination into the office encounter. Routine testing provides consistent, matter-of-fact, non-stigmatizing HIV testing to all people at risk.

Routine testing does not absolve

the health care provider of his or her responsibility to educate patients. It simply gets rid of the prerequisite questions currently needed for testing. Since most Americans are knowledgeable about the modes of HIV transmission, a brief review of the risk factors, including heterosexual activity, would be in order. At this time, myths regarding HIV transmission could also be discussed. Brief culturally sensitive pamphlets in nonprofessional language could supplement and further detail common questions that patients may have but be uncomfortable discussing.

Testing for HIV leads to diagnosis. Diagnosis of HIV leads to decreased transmission.¹⁴ Earlier testing and diagnosis may lead to a mitigation of the epidemic. We previously published the finding that none of the blacks and no men in our sample were offered HIV testing by their health care provider.¹¹ Routine testing may help to eliminate the real or perceived attitudes or stigmatizing barriers to HIV testing by the equitable offering of the test to *all* sexually active persons. Routine testing for HIV certainly is not the panacea; alternatively, it could provide a welcome change by those who are already disproportionately represented in this preventable epidemic. Patients have indicated their desire¹¹ for this low cost¹; value free, silence-breaking routine method of HIV testing. [The Medicare charge for a cholesterol panel is \$130 while that for an HIV test is \$30.] It is our responsibility as public health researchers, health care providers and educators to explore this culturally sensitive form of testing as a means to reducing the current epidemic.

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TABLE 1 RESPONDENT DEMOGRAPHICS

	PERCENTAGE	NUMBER
RACE		
Hispanic	49%	49
Black	21%	21
White	14%	14
Other*	16%	16
GENDER		
Male	21%	21
Female	79%	80
MARITAL STATUS		
Married	42%	42
Never-married	35%	35
Widowed	3%	3
Divorced/Separated	20%	20
EMPLOYMENT STATUS		
Job with Wages	76%	76
Governmental Support	13%	13
INSURANCE STATUS		
Commercial Insurance	19%	19
Medicaid/Medicare	53%	53
Uninsured	28%	28
HOUSING STATUS		
Other	6%	7
Own House/Apartment	93%	94
EDUCATIONAL LEVEL		
<High School	25%	25
High School /GED	34%	34
Some College or Greater	42%	42

* "Other" refers to individuals who self-identified as American Indian/Alaskan Native, Asian and Pacific Islander, CapeVerdian, or mixed race/ethnicity.

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REPORTING NURSING HOME QUALITY IN RHODE ISLAND

ROSA R. BAIER, MPH, DAVID R. GIFFORD, MD, MPH, AND VINCENT MOR, PHD

As the US population ages,¹ the number of nursing home residents increases, and reached 1.7 million in 2000.^{2,3} Rhode Island has 95 Medicare- and Medicaid-certified nursing homes with approximately 8,800 residents. Over the last four decades, concerns about the quality of nursing home care have periodically arisen. In July 2003 the **General Accounting Office (GAO)** reported that nearly 15% of the nation's approximately 17,000 nursing homes had "repeatedly caused actual harm to residents."⁴ Locally, reports by the *Providence Journal* and the Lieutenant Governor's nursing home task force have drawn attention to the quality of care at Hillside Health Center, a facility that closed in 2003. Such reports emphasize the need for healthcare consumers to discriminate between high- and low-quality nursing homes.

Historically, consumers have selected nursing homes based largely on proximity, word-of-mouth reputation, and sometimes the deficiency citations available through the state survey and certification agencies. More objective data, such as resident outcomes, were not available to consumers until recently, when policymakers on both the state and national level began mandating the public release of quality performance data. Rhode Island is a recognized leader in public reporting.

PUBLIC REPORTING IN RHODE ISLAND

In 1998, recognizing the need for comparative data about healthcare providers, Lt. Governor Charles Fogarty (then a state senator) introduced legislation in the Rhode Island General Assembly to create a public reporting program for all licensed health care facilities in the State, including nursing homes (Chapter 23-17.17).^{5,6} By providing comparative data to consumers, the program encouraged quality improvement and enhanced

accountability in healthcare facilities statewide.^{6,7} Along with other states (such as Connecticut), Rhode Island's public reporting legislation served as a model for the development of the **Nursing Home Quality Initiative (NHQI)** run by the **Centers for Medicare & Medicaid Services (CMS)**.⁸

During the pilot phase of the NHQI (2001-2002), Rhode Island enjoyed a unique position as one of six participating states to publicly report **Minimum Data Set (MDS)**-derived quality measures on the CMS Web site. The quality measures report health care outcomes for several clinical topics, such as the proportion of resident with pressure ulcers, infections, and pain.⁹ The same measures are available on HEALTH's Web site—though HEALTH incorporated a graphical presentation using a star system while CMS presented quality measures scores only. Nursing home clinical data have been available in Rhode Island since 2001.^{6,7}

EVALUATING PUBLIC REPORTING

Nursing home quality measures were developed and publicly reported because: 1) the data allow providers to track their facilities' progress and tailor their quality improvement efforts accordingly¹⁰ and 2) data encourage competition on the basis of quality. Although some suggest that the NHQI resulted in improvements for several quality measures, little empirical evidence supports this conclusion.⁹ While consumer groups initially supported public reporting, the "complexity of the measures"¹¹ have prompted many to express concerns.^{2,11} Clearly, consumers want a single measure that makes it possible to unambiguously identify the "best" nursing home.

ASSESSING THE MEASURES

Despite extensive validity testing

before their release,¹⁴ the quality measures have notable reliability and validity limitations.¹⁵ For example, the cross-sectional nature of the measures prevents consumers from easily tracking results over time, and small facilities may have highly variable scores. Moreover, the measures reflect many facets of quality and efforts to understand the multi-dimensional nature of nursing home quality have been limited. To date, little effort has been spent evaluating whether or not a facility's scores reflect the care the facility provides—or if the measures actually reflect a facility's unique group of residents.

CREATING OVERALL MEASURES OF QUALITY

The purpose of this project was to develop and test the validity of overall measures of nursing home quality. To test the measures, we examined how overall measures relate to nursing home characteristics (both facility- and resident-level) and the quality deficiencies that result from state inspections.

DATA SOURCE

The data for this project were a quality measure dataset for quarters 2 and 3, 2002, provided by CMS under a data use agreement, and OSCAR data from November 2002. The quality measure data are national data for 16,384 Medicare- and Medicaid-certified nursing homes nationwide. OSCAR data are collected by state Survey and Certification Agencies during on-site evaluations conducted at least once every 15 months or as the result of a complaint investigation.¹⁶

Using these data, we created two types of overall measure of nursing home quality: (1) composite measures averaging quality measure scores across clinical domains; and (2) a dichotomous high-performance status variable based on the quality measures and health-related deficiencies. We

then evaluated correlation among the quality measures and the composite measures, and conducted a simple logistic regression using the high-performance status variable (dependent variable) and structure, market and facility and resident-level characteristics (independent variables).

RESULTS

The data included five chronic quality measures, four of which demonstrate mild inter-correlation: the proportion of residents with loss of ability in basic daily tasks, infections, pressure ulcers, and pain. Correlation among these quality measures is very low (0.07-0.38, $p < 0.001$). The composite measure derived from the quality measures also has low correlation with the quality measures (0.51-0.65, $p < 0.001$) and does not adequately capture variation among the quality measures by facility size.

The results of the logistic regression model show that three case-mix indices calculated using Nursing Home Statistical Yearbook specifications¹⁷ (ADL care intensity, average patient acuity, and skilled treatment intensity) are all significantly associated with decreased likelihood of high-performance status. When examining market variables, we find that facilities with higher numbers of Medicaid residents are more likely to be high performing. In contrast, staffing, facility ownership, size, and location (urban vs. rural) are not associated with high-performance status.

DISCUSSION

Publicly reporting nursing home quality is an important first step towards empowering consumers to demand better nursing home quality in the US. Nevertheless, revisions are necessary to increase the utility of these measures and further help consumers identify high-quality facilities. An overall measure of nursing home quality would be particularly helpful for healthcare consumers.

While attractive on face validity, our analyses show that averaging quality measure scores and creating high-performance labels based on

quality measures and deficiencies are not methodologically appropriate ways to create an overall measure of nursing home quality. Our results show that the composite measure does not adequately capture variation across most quality measures, and may actually mask differences in quality measure score by size; this highlights the problem of aggregating data across clinical domains, and emphasizes the fact that doing so may obscure true differences between facilities.

Furthermore, the logistic regression results indicate that facility high-performance status depends largely on case-mix, suggesting that CMS's current quality measures fail to account for differences in case-mix. These results cast doubt on the validity of our dependent variable, as well as the quality measures themselves, and indicate these variables may reflect patient composition instead of nursing home quality of care. The relationship between higher numbers of Medicaid residents and an increased likelihood of high-performance status is also unexpected and does not align with previous research.

The creation of an overall measure of nursing home quality is inevitable, given the potential utility of such a measure. Simple methods to create an overall evaluation measure are therefore a necessary first step towards creating a valid overall measure, both to better understand the current quality measures and their relationship to quality, and also to preclude the premature publication of aggregate results that do not reflect nursing home quality. Our analyses demonstrate that further research is necessary to identify valid methods for creating an overall measure of nursing home quality.

CONCLUSION

In summary, Rhode Island's public reporting legislation helped pave the way for the nationwide release of comparative nursing home data. While the quality measures currently report multiple clinical outcomes, however, a single overall measure of nursing home quality is desirable and may prove more useful to consumers. An overall measure

of nursing home quality has not yet been developed, and the results of this project indicate that simple methods for creating such a measure are not valid. Creating a valid measure will require additional methods and may be limited by the validity of the quality measures themselves.

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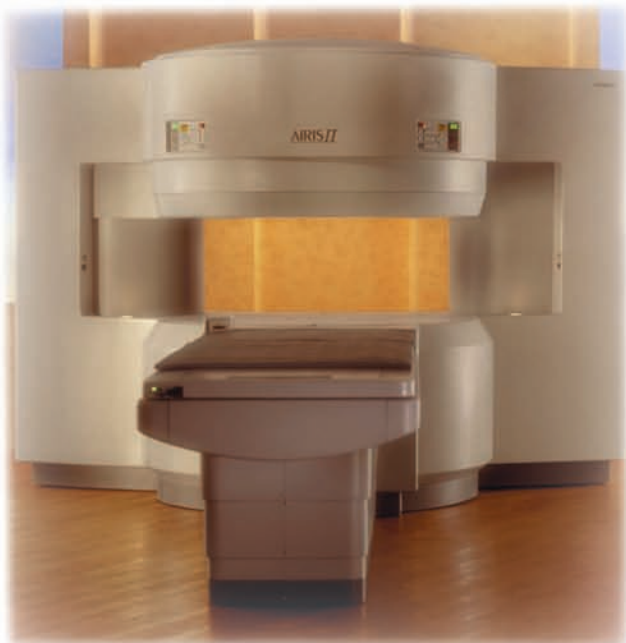
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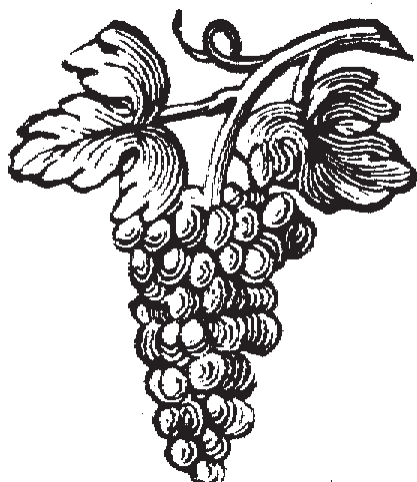
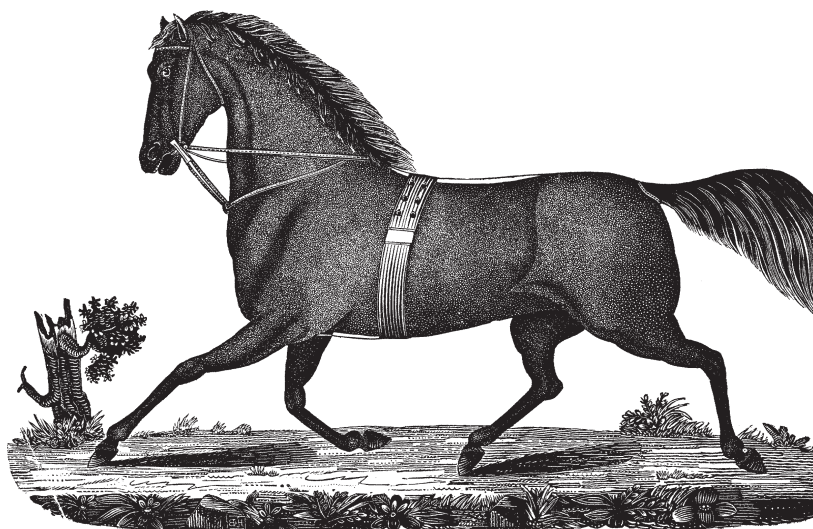
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BICYCLE RELATED TRAUMATIC BRAIN INJURY AT HASBRO CHILDREN'S HOSPITAL: 1997-2003

MICHAEL J. MELLO, MD, MPH, JAMES LINAKIS, MD, PHD, SCOTT MEYER, MD,
TED D. NIRENBERG, PHD, JANETTE BAIRD, PHD, AND GREGORY RENZA

Each year approximately 1.5 million Americans sustain **traumatic brain injuries (TBIs)** with almost 50,000 deaths.¹ Unintentional injury is the leading cause of death in children,² with TBI representing the injury type most commonly associated with death. Recent estimates from the **CDC (CDC)** indicate that among children 0 to 14 years of age approximately 475,000 TBIs occur annually.³ The financial burden of TBI in children has been estimated to be \$56 billion in direct and indirect costs.⁴

Approximately 70% of children ages 5 to 14 bicycle.⁵ In 1999, 750 bicyclists died in crashes; 25% were children ages 5 to 15.⁶ Head injury accounts for more than 60% of all bicycle-related deaths and the majority of serious disability.⁷

This study analyzed 6 years of data from a large urban pediatric ED for children who incurred TBIs from bicycle crashes. We compared our database with a national database of ED visits for injury.

METHODS

A retrospective review of billing data collected between 1997 and 2003 from the **Hasbro Children's Hospital (HCH)**, a large urban pediatric ED for children ages 0 to 16 years, was completed. The search tracked ICD-9 codes consistent with TBI as defined by *Guidelines for Surveillance of Central Nervous System*.¹ The external cause-of-injury codes (E codes) linked to these ICD-9 codes were examined for those consistent with TBI that occurred while the child was riding a bicycle. The E codes included were E826.1, E810-825 all with .6 as a fourth digit modifier. Patients' personal identifiers were removed and the data were sorted on age, gender, and admission status. The data were stratified by age using categories that approximate educational levels to assist future injury prevention

efforts that may occur within schools. Age groups for analyses were: ages 5 and under (preschool), 6 to 8 years (early elementary grades), 9 to 11 years (grades 4 to 6), 12 to 14 years (middle school - grades 7 to 9), and 15 to 16 years (high school). Incidence of TBI in this ED sample was calculated within these age groups and further characterized by gender and admission status. We examined the medical records of those admitted to see whether a bicycle safety helmet was used at the time of injury. Using national data from the **National Electronic Injury Surveillance System - All Injury Program (NEISS-AIP)**, we performed a similar analysis. NEISS - AIP is a collaborative effort between the US Consumers Product Safety Commission and the CDC, National Center for Injury Prevention and Control.⁸ Data on injury-related visits were obtained from a national sample of 66 out of 100 NEISS hospitals, which were selected as a stratified probability sample of hospitals in the United States and its territories with a minimum of six beds and a 24-hour ED. NEISS-AIP collects data on initial visits for all categories of injuries treated in US EDs, and provides data on nearly 500,000 injury-related ED visits annually. It is intended to provide national incidence estimates of all categories and external causes of nonfatal injuries and poisonings treated in US hospital EDs.

Analyses of data were conducted using SAS (version 8 and 9). Chi-square analyses were used to examine for differences between age and gender groups in the incidence of TBI due to injuries obtained while riding a bicycle and the need for inpatient hospital admission.

RESULTS

From 1997 to 2003 there were 4,509 pediatric ED visits for TBI at HCH. Of those, 175 (3.9%) were for

bicycle-related TBIs. Analyses were conducted on the 175 bicycle-related TBIs. (Table 1) A series of Chi-square analyses were conducted to determine any differences in the incidence of TBIs across the groups of children over 6 years old (because of the low incidence of TBIs in children under age 6, these children were excluded from these analyses). Among the groups included in the analyses, those 12 to 14 years old were seen in the ED for bicycle-related TBIs significantly more often than other age groups, Table 1 ($p < .05$). In regard to gender, for all age groups males were nearly five times as likely to visit the ED due to bicycle-related TBI. Males accounted for 146 visits and females 29 ($p < .0001$). In the two age groups with the greatest frequencies of bicycle-related TBI, there was no significant difference in the number of children admitted to the hospital: 12 children in the 9 to 11 years old age group and 14 in the 12 to 14 years old age group ($p = .21$). For those admitted in these high incidence age groups, we reviewed the medical records to examine if a helmet was used. We were able to locate and find a reference to helmet use in 18 of the 26 medical records. In 17 of the 18 cases the record documented that the injured teenager did not wear a helmet at the time of injury.

Compared to the NEISS database, the results of our HCH data were for the most part similar. The age groups with the highest occurrence of bicycle-related TBI were the 9 to 11 and 12 to 14 year olds. However, in contrast to our data from HCH, in the NEISS national database the 2 groups had nearly equal occurrence with 12 to 14 year olds with 25.9% (95% CI 22.3 to 29.4%) of cases and the 9 to 11 year olds with 26.2% (95% CI 22.3 to 30.0%) of cases. There was a similar gender disparity in the distribution of cases: 79.2% (95% CI 75.2 to 83.2%)

were male and 20.7% (95% CI 16.7 to 24.7%) cases were female.

DISCUSSION

Our review highlights groups that can be targeted for future injury prevention activities. Specifically, males of approximate middle school ages had the highest incidence of bicycle-related TBI, which is consistent with other research.⁷ In regard to bicycle-related TBI, both the HCH and NEISS results highlight the need to address the high incidence among 9 to 14 year olds. This is useful information for future injury prevention activities. It can be used by school leaders, community public health specialists, and traffic safety professionals to target their activities. Furthermore, it can be used by healthcare providers to validate the need for counseling adolescents about injury prevention.

A simple effective prevention strategy exists – use of bicycle safety helmets. In case-control studies,^{9,10} helmets have been shown to reduce the risk of head injury by 69 to 85%. The US **Consumer Product Safety Commission (CPSC)** in 1999 enacted safety standards for bicycle helmets that drew on previous independent safety standards (SNELL, ATSM, ANSI); consumers should look for the CPSC sticker when purchasing a helmet.¹¹ Bicycle helmets are inexpensive and widely available. However, helmets need to fit properly to be effective.¹² Simple information for children on how to check for correct fit can be easily obtained.¹³ Previous survey research has cited explanations for not wearing a helmet; e.g., haven't gotten around to it (20%), not comfortable (18%), unnecessary (9%), not attractive (7%).¹⁴ Health professionals can stress the importance of correctly using bicycle helmets and dispel myths about them.

CONCLUSION

Bicycle-related TBI in children presenting to HCH ED was found to be greatest in males 12 to 14 and 9 to 11 years old. A national ED database also showed high prevalence in these age groups. The use of bicycle helmets

TABLE 1

Incidence of Bicycle Related TBI by age group in Hasbro Children's Hospital ED and NEISS Database

Age group	HCH TBI (# of identified cases)	NEISS
0-5 years	10% (17)	15.8%
6-8 years	19% (34)	21.6%
9-11 years	24% (42)	26.2%
12-14 years	38% (66)	25.9%
15-16 years	9% (16)	10.5%

is effective at reducing the risk of TBI, and health professionals should focus on this high-risk group.

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CREATIVE CLINICIAN CASE

BILATERAL ORBITAL HEMATOMAS WITH AN ORBITAL ENCEPHALOCELE MIMICKING A CAVERNOUS SINUS THROMBOSIS

MARJORIE A. MURPHY, MD, AND CATHERINE M. MEYERLE, MD

Orbital encephaloceles are a rare complication of orbital roof fractures that generally occur after severe trauma.¹ We report a case of an orbital encephalocele following minor trauma in the context of bilateral orbital roof fractures and orbital hematomas that clinically resembled a cavernous sinus thrombosis. To our knowledge, this finding has not been previously reported.

CASE REPORT

A 48-year-old man with a history of metastatic malignant melanoma presented with four-day history of increasing right periorbital edema and a one-day history of bilateral proptosis, mental status changes, fever, and vomiting. He had undergone a bifrontal craniotomy with intraoperative photoelectron radiation treatment for melanoma metastases one month prior. His medications included dexamethasone, phenytoin, and risperidone. He resided in a nursing home and had reportedly thrown himself out of his wheelchair on the day of presentation. On

examination in the emergency room, the patient was obtunded, and a visual acuity could not be obtained. Bilateral nonpulsatile proptosis with periorbital edema and erythema was noted. The pupils were 5 mm, round, and sluggishly reactive to light OU without an afferent defect. There were no spontaneous eye movements, and oculocephalic testing was contraindicated because of cervical collar immobilization. Bilateral chemosis and subconjunctival hemorrhages were evident. Intraocular pressures were elevated at 45 mm Hg in both eyes and did not improve after a lateral canthotomy and cantholysis (Figure 1A). Dilated fundus exam was remarkable for pink optic nerves with moderate disc swelling OD and sharp margins OS. Based on the patient's clinical presentation as well as his history of a recent craniotomy, radiation treatment, and increased risk of infection due to chronic steroid use, a cavernous sinus thrombosis was suspected.

Axial **computed tomography (CT)** showed a soft tissue density adjacent to the right optic nerve and

bilateral tenting of the globes consistent with severe proptosis (Figure 1B). CT coronal reconstructions illustrated bilateral orbital roof fractures with displaced bone fragments and bilateral superior orbital hematomas (Figure 2A). **Magnetic resonance imaging (MRI)** identified the soft tissue mass seen on axial CT as herniated frontal lobe (Figure 2B) and did not demonstrate a cavernous sinus thrombosis. A lumbar puncture revealed an elevated opening pressure of 300 mm H₂O.

During the patient's hospitalization, the intracranial pressure normalized after a ventriculostomy, and the intraocular pressures normalized with topical timolol, dorzolamide, latanoprost, and brimonidine. Blood and cerebrospinal fluid cultures were negative. The patient became afebrile on empiric antibiotics. Despite the CT findings suggestive of impending right optic nerve compression from the encephalocele, no afferent pupillary defect developed. Surgery was not performed due to widely metastatic disease. On hospital day 15, the patient died after withdrawal

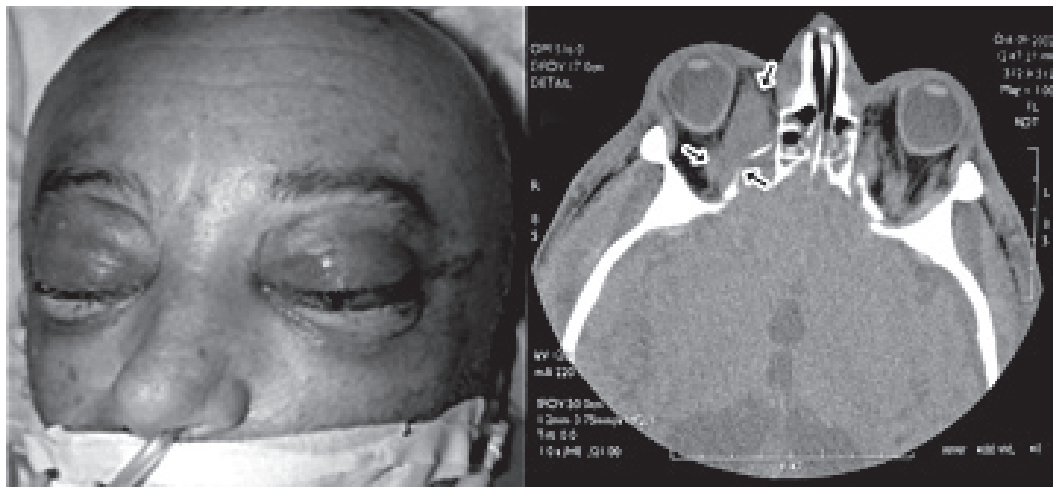


FIGURE 1. (A) Digital photograph of persistent bilateral proptosis despite an emergent bilateral lateral canthotomy and cantholysis. The lateral canthal tendons are cut to allow for anterior decompression of the orbit.

(B) Axial computed tomography showing solitary soft tissue density adjacent to the right optic nerve (arrows), tenting of the globes consistent with severe proptosis, and displaced bone fragments adjacent to the medial orbital walls.

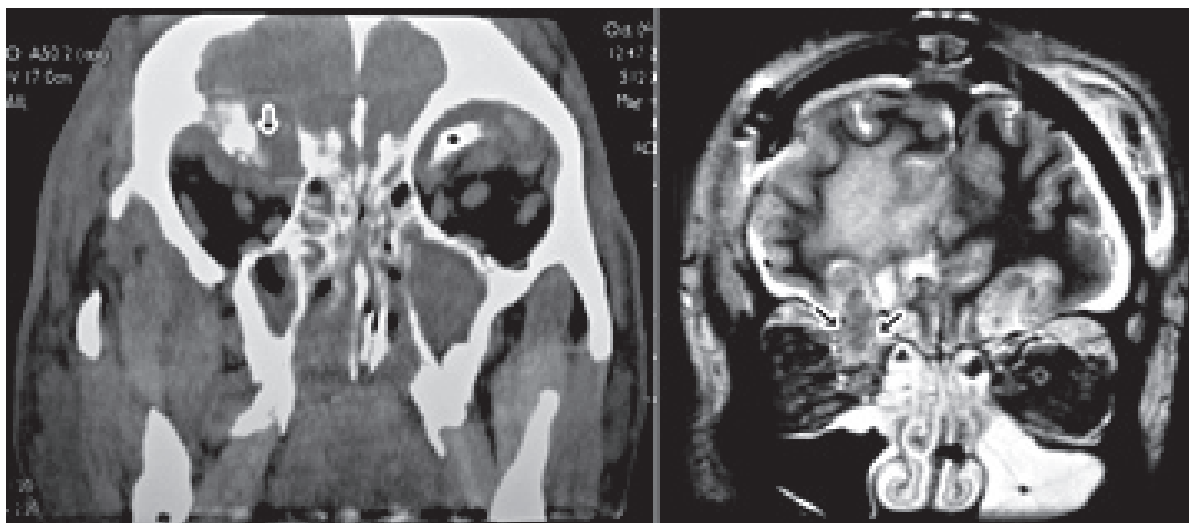


FIGURE 2. (A) Computed tomography coronal reconstruction showing bilateral roof fractures (arrow, right fracture) with a displaced bony fragment in the left orbit (asterisk). (B) T2-weighted coronal magnetic resonance imaging demonstrating right frontal lobe edema and an encephalocele involving the right orbit (arrows).

of ventilatory support. An autopsy was not performed.

COMMENT

The complications and presentations of orbital roof fractures are diverse. Sequelae include orbital deformities, ocular injury, extraocular muscle imbalance, blepharoptosis, and intracranial complications,² with orbital encephalocele being a rare complication following severe head trauma.¹ In contrast, cavernous sinus thrombosis may present clinically with proptosis, chemosis, ophthalmoplegia, and elevated intraocular pressures along with fever, vomiting, and mental status changes. Unlike our patient, the two reported cases of bilateral roof fractures and unilateral encephalocele did not mimic a cavernous sinus thrombosis.^{1,3} Perhaps the unique combination of bilateral roof fractures with bilateral orbital hematomas and an orbital encephalocele in the setting of raised intracranial pressure was responsible for this patient's dramatic clinical presentation masquerading as a cavernous sinus thrombosis.

This patient's presentation was also unusual in that he developed an orbital encephalocele following relatively minor trauma after falling out of his wheelchair. Postsurgical and postradiation factors likely resulted in the loss of integrity of the bony roof, thereby increasing the risk of roof

fractures after presumably minor head trauma. The fact that the patient's proptosis, mental status changes, fever, vomiting, and right periorbital edema started prior to his fall raised the suspicion of a cavernous sinus thrombosis at the time of presentation. Moreover, this chronology suggests the possibility that the frailty of the orbital bones from previous oncological treatment was actually the inciting factor in this case, with the fall only further compounding the problem.

This case demonstrates that orbital hematomas with an encephalocele in the setting of bilateral orbital roof fractures can mimic a cavernous sinus thrombosis. Prompt neuroimaging with both CT and MRI can lead to a definitive diagnosis. To our knowledge, this is the first case of an orbital encephalocele presenting with associated findings suggestive of a cavernous sinus thrombosis.

Presented in part as a poster at: Association for Research in Vision and Ophthalmology Annual Meeting, April 25-29, 2004, Fort Lauderdale, FL.

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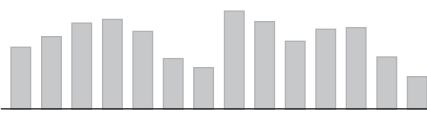
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HEALTH BY NUMBERS

RHODE ISLAND DEPARTMENT OF HEALTH • DAVID GIFFORD, MD, MPH, DIRECTOR OF HEALTH
EDITED BY JAY S. BUECHNER, PHD

QUALITY OF LIFE INDICATORS IN RELATION TO INCOME AND PHYSICAL ACTIVITY FOR RHODE ISLAND ADULTS, 2002

JANA E. HESSER, PHD, AND YONGWEN JIANG, PHD

Increasing the quality of life and years of healthy life by the year 2010 is an over-arching public health goal for Rhode Island, as it is for the nation.¹ The concept of **health-related quality of life (HRQOL)** refers to a person's "perceived physical and mental health".² It is estimated that 41 million American adults over 18 years old experience physical or mental impairment that affects their quality of life.³

This report examines ten indicators for HRQOL for Rhode Island adults in 2002, in relation to income level and physical activity. Data are from the 2002 Rhode Island **Behavioral Risk Factor Surveillance System (BRFSS)**.

METHODS

The BRFSS is a national telephone survey of randomly selected non-institutionalized adults (ages 18 and older). The BRFSS monitors the prevalence of behavioral risks that contribute to the leading causes of disease and death among adults in the United States. It is administered in all 50 states and 4 US territories with funding and methodological specifications provided by the **Centers for Disease Control and Prevention (CDC)**.⁴

In 2002 the Rhode Island BRFSS conducted 3,843 random-digit dialed interviews throughout the calendar year. "Error" bars on the charts represent the 95% confidence limits around the values calculated from the sample data. Chi-square tests of differences were tested at the $p < 0.01$ level for statistical significance.

The BRFSS HRQOL questions include: self-rated general health status, self-reported number of healthy/unhealthy days in the past 30 days for physical health, mental health, physical or mental health related activity limitations, pain related activity limitations, depression, anxiety, lack of sleep, and lack of energy.⁵ A derived variable was "major depressive episode (MDE) in the past year."

Response categories for the HRQOL items were dichotomized as follows: General overall health status

was dichotomized into poor/fair vs. good/very good/excellent health. The number of unhealthy days or activity limitation days was dichotomized as 14 or more days of poor health in the past month vs. less than 14 days. The MDE variable was dichotomized as occurred/did not occur in the past 12 months.

We obtained overall prevalence estimates for each of the 10 HRQOL indicators, and examined the relationship between HRQOL variables and each of 12 independent variables. Here we present results for household income, and participation in leisure time physical activity. These were two of the independent variables having the strongest correlation with multiple indicators of poor HRQOL.

RESULTS

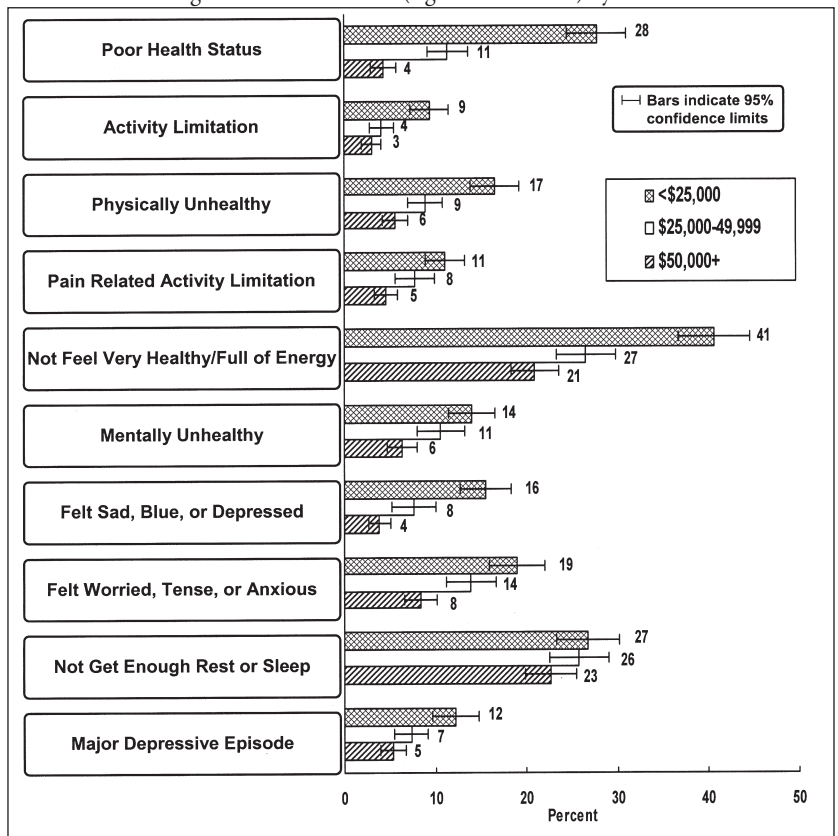
Overall, 14% of Rhode Island

adults reported fair or poor general health. Using the criterion of 14 or more days of poor health in the past month (referred to hereafter as "recent frequent" (RF) poor health), the two highest prevalence HRQOL measures were for RF lack of energy (28%) and RF inadequate sleep or rest (24%). Also, 10% had RF poor physical health, 5% had RF activity limitations due to a physical or mental health problem, and 7% had RF pain-related activity limitations. Ten percent reported RF poor mental health (stress, depression, and problems with emotions), 8% had RF days when they felt sad, blue or depressed, and 13% had RF days when they felt worried, tense or anxious. Eight percent of respondents experienced a major depressive episode in the past 12 months.

By income, the prevalence of all poor HRQOL indicators was greatest

Figure 1

Health Risks Among Rhode Island Adults (Ages 18 and older) by income level -- 2002



for persons with household incomes less than \$25,000 and lowest for persons with household incomes of \$50,000 or more. (Figure 1) In all instances but one ("not get enough rest or sleep") the rates for the lowest income group were twice, or more than twice, as great as the rates for the highest income group. These differences were all statistically significant. The most extreme difference occurred for general health status, where 28% of the lowest income group reported poor/fair general health, a rate 7 times greater than for the highest income group. RF feelings of being sad, blue or depressed was the next largest difference. The rate for the lowest income group (16%) was 4 times that of the highest income group.

Adults who reported engaging in no leisure time physical activity had higher rates for all poor HRQOL indicators than adults who reported being physically active. (Figure 2) In comparison to physically active adults, rates for inactive adults ranged from being 1.27 times as high ("lack of rest/sleep") to more than 3 times as high ("activity limitation").

DISCUSSION

The large number of Rhode Island adults whose quality of life is impaired in some way, as reflected by these HRQOL measures, is sobering. About one fourth of RI adults, approximately 200,000 people, do not get enough rest or sleep; about the same number do not feel very healthy and full of energy. About 1 in 10 adults, or 80,000 people, report an indicator for some kind of RF poor mental health, or for RF poor physical health, and together, about 1 in 10 (approximately 80,000 people) report activity limitations due to a physical or mental problem or pain. Because these HRQOL indicators do overlap one another to some extent, in future analyses we will examine interactions among them.

A relationship between poor health outcomes (e.g. mortality, disease incidence, and disability) and low income in the United States has been observed in many studies. Our results show that the relationship between poor health and low income extends into subjectively felt measures of HRQOL. The poor are not only sicker, but also experience poorer quality of life, reinforcing the need to target public health interventions towards them.

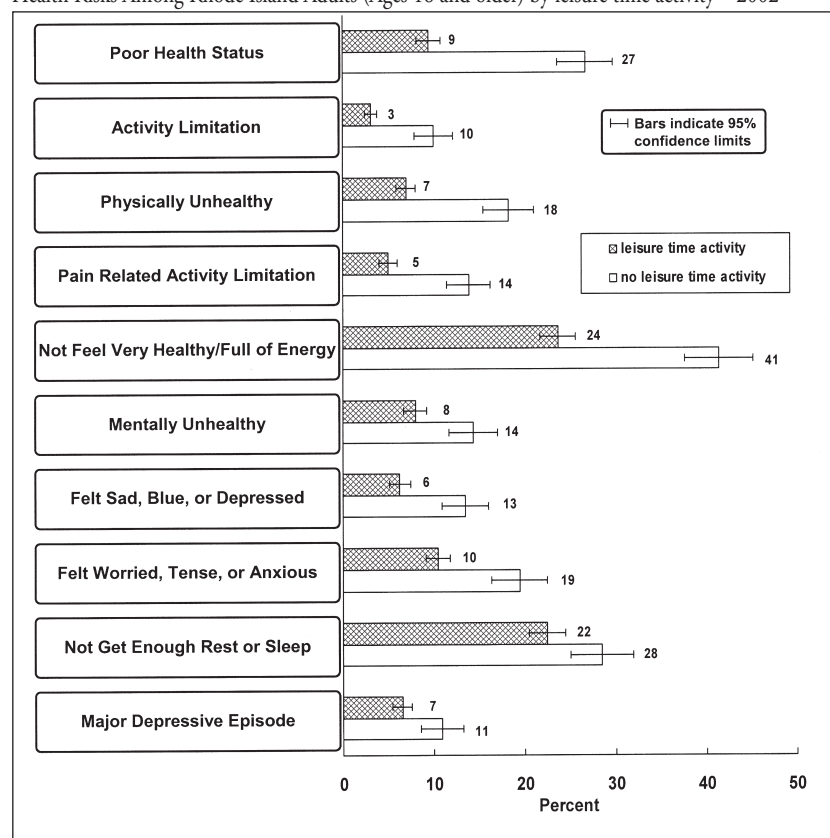
The strength and pervasiveness of the correlation between lack of physical activity and poor HRQOL supports the findings of others⁶, as well as work which has identified a predictive relationship between perceived health and physical activity behavior.⁷ There has been little improvement over the past 15 years in levels of physical activity in RI as measured by the BRFSS.⁸ Increasing levels of physical activity may require efforts to improve aspects of quality of life, as well as to encourage people to exercise more.

Much of the investment in health over the past 100 years has gone towards saving and prolonging life. With these efforts, more Americans today live longer, but many live with chronic conditions and in circumstances that adversely affect their ability to lead high quality lives. Since enhancing quality of life has become an overarching goal for public health, we must continue and improve our ability to monitor health related quality of life.

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Figure 2
Health Risks Among Rhode Island Adults (Ages 18 and older) by leisure time activity – 2002



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RHODE ISLAND TOPS HOSPITAL COMPARE QUALITY IMPROVEMENT

Excellence is pursued and is too often amorphous. In Rhode Island, healthcare professionals should feel a sense of tremendous pride. Rhode Island finished first among all states for the 10 overall combined quality core measures recently posted on Hospital Compare, a new consumer resource that is available at www.hospitalcompare.hhs.gov or www.medicare.gov.

This national report represents a public-private collaboration by the **Centers for Medicare & Medicaid Services (CMS)** and the Hospital Quality Alliance and focuses on data collected during the first and second quarters of 2004 across three common conditions: heart attack, heart failure, and pneumonia. More than 4,200 hospitals across the country including all acute care hospitals in Rhode Island voluntarily participated in this first national effort to publicly report credible and user-friendly information about the quality of care delivered in the hospital setting.

The seventeen measures reported on *Hospital Compare* (chart) include 10 “starter” measures, and additional measures that many hospitals have also voluntarily reported. These measures were chosen because they relate to three serious medical conditions (heart attack, heart failure,

pneumonia) and are measures that hospitals can easily submit for public reporting. The measures have also gone through years of extensive testing for validity and reliability and are endorsed by the National Quality Forum, a national standards setting entity.

Rhode Island finished first overall and finished first in five of the individual measures. Rhode Island was followed by Massachusetts, Connecticut, Wisconsin and Vermont respectively. Rhode Island finished first or tied for first in oxygenation assessment in pneumonia, assessment of left ventricular function in heart failure, beta-blocker at arrival, beta-blocker at discharge and aspirin at discharge in heart attack.

The ultimate goal is for this set of measures to be reported by all hospitals, and accepted by all purchasers, oversight and accrediting entities, payers and providers. In the future, additional quality measures will be added to *Hospital Compare*.

Quality Partners of Rhode Island, the state’s Quality Improvement Organization, plays a pivotal role in promoting the use of quality information to providers, consumers and policymakers. In 1998, Rhode Island launched one

Hospital Quality Measures	
Measure	Condition
Aspirin at arrival *	Acute Myocardial Infarction
Aspirin at discharge* **	
Beta-Blocker at arrival* **	
Beta-Blocker at discharge* **	
ACE Inhibitor for left ventricular systolic dysfunction*	
Smoking cessation	
Thrombolytic agent received within 30 minutes of hospital arrival	
PTCA (PCI) received within 90 minutes of hospital arrival	
Left ventricular function assessment* **	Heart Failure
ACE inhibitor for left ventricular systolic dysfunction*	
Comprehensive discharge instructions	
Smoking cessation	
Initial antibiotic timing*	Pneumonia
Pneumococcal vaccination*	
Oxygenation assessment* **	
Blood culture performed before first antibiotic received	
Smoking cessation	

* One of the 10 “starter” measures.

** Rhode Island finished first in the country on this individual measure.

of the first comprehensive public reporting initiatives in the country. Since then, Quality Partners, in partnership with the Hospital Association of Rhode Island and the Rhode Island Department of Health, has helped inform the development of several public reporting programs including Hospital Compare.

Additionally, Quality Partners works closely with nurses, physicians and administrators to adopt techniques and strategies to improve patient quality in the hospital setting. "The Hospital Compare data reaffirms what we in the quality movement have always believed – by working in collaboration we can achieve true public health improvements," said Marcia Petrillo, Chief Executive Officer for Quality Partners.

"Hospital Compare is a positive step forward in providing consumers with important and comparable data. For hospitals, this report serves as a benchmark for improvement. Through this collaborative process, quality

improvement and superior public health can be achieved," added Ms. Petrillo.

Quality Partners applauds the efforts of all healthcare professionals in Rhode Island for their dedication and commitment to excellence. "When we look at the data, we recognize there is still opportunity to improve," said Phyllis McBride, RN, Hospital Project Coordinator. "Although Rhode Island performed better than the national average in the pneumococcal vaccination measure, we can do even better. All of these quality improvements will help ensure the health and wellbeing of Rhode Island residents. This ultimate goal drives our desire to continually improve quality. Thank you for helping us make a difference."

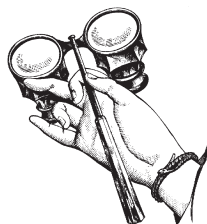
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LETTERS To The Editor

April 2005

Dear Dr. Friedman,

I feel compelled to respectfully write regarding your commentary, "On Being Grandfathered," in the March 2005 *Medicine & Health/Rhode Island*, as I was disappointed in the content and conclusions of your editorial. The **Rhode Island Medical Society (RIMS)** should embrace and encourage the process of re-certification for all physicians regardless of "grandfather" status. Re-certification is not merely a test, but an educational process that contributes to the continued excellence and competency of an individual physician; and if promoted collectively, could potentially augment the overall quality of medical care in the state. At a time when quality of care and medical errors are in the forefront of public attention, the Society and its spokespeople should lead the way in promoting universal participation in this worthwhile process. I was certified in Internal Medicine in 1991, and in Cardiovascular Diseases in 1993, both by the **American Board of Internal Medicine (ABIM)**. I was not "grandfathered" in either discipline, and chose to re-certify in CV Disease only, as my clinical activities are devoted to that subspecialty. While I personally experienced your trepidations and resistance to the re-certification process as my certificate expiration date neared, I nonetheless completed the program, and found it beneficial, convenient and not a bit painful. If planned well in advance, the ABIM process can be completed with relatively little interruption in clinical practice. The educational portions are markedly more involved than the fairly minimal "test taking" portion. I did study at my own pace using materials from the **American College of Cardiology (ACCSAP)** and I also qualified for a large amount of CME credits along the way. I think one would find with a little research at the ABIM web site (www.abim.org), that the system is well thought out, reasonably challenging and promotes success, not failure. Taken directly from the ABIM web site:

*"Medical science continues to change at an astonishing rate. Today, lifelong learning has become not only desirable, but essential in order for doctors to stay current in the diagnosis and treatment of patients. To aid in this learning process the ABIM has developed **Continuous Professional Development (CPD)**, its program for maintenance of certification.*

The CPD program helps general internists and sub-specialists improve the quality of patient care. It also fosters the continuing scholarship required for professional excellence in the practice of medicine.

The CPD program must be completed every 10 years, and is designed to:

- * Improve the quality of patient care.*
- * Set standards of clinical competency for internal medicine, subspecialties, and added qualifications.*
- * Foster continuing scholarship and improvement required for professional excellence over a lifetime of practice.*
- * Help lead quality improvement in medicine, while being respectful of physicians' time.*

In a survey of nearly 12,000 ABIM Diplomates who completed the CPD program, 93% agreed that the program's objectives were met. More than 75% rated the program to have moderate to extremely high personal and professional value. In another survey of Diplomates, 75% also found the self-evaluation modules relevant to their clinical practice and 98% reported that the educational objectives of the self-evaluation



A PHYSICIAN'S LEXICON

THE WORDS OF GENERAL MEDICINE

Words such as hygiene, prevention, prophylaxis and cure convey such broad meanings that they don't fit comfortably into the specialized vocabulary of any of the medical specialties. They belong, rather, to the entire profession.

Hygiene, a word defining those actions which promote the preservation of health is derived from a Greek word meaning well-being. *Hygieia* was the daughter of Asclepius, the Greek god of medicine. The word, health, however, is of Germanic origin and descends from an earlier word, *hal*, meaning hale or whole. This precursor word has also given rise to the modern German word, *heil* [as in *sieg heil*] and the rarely used English toasting word, wassail, meaning "may you be hale." Derivative words, emphasizing the sense of wholeness include: holistic, hale, holograph and holocaust [wholly consumed by fire.]

Preventive [as in preventive medicine] descends directly from the Latin, *praevenire*, meaning to anticipate,

to come before, which, in turn comes from the Latin, *venir*, meaning a place to come to [i.e., a meeting place]. Many words stem from *venir*, including venue, advent, convention, covenant, avenue, event, provenance [the place of origin] and souvenir [from the Latin, *subvenir*, meaning something which comes to one's mind, a memento.]

Prophylaxis, defined as those interventions which prevent disease, is derived from the Greek prefix, *pro*, meaning before or in favor of, and the Greek *phylactios*, meaning to ward off, to guard against. *Anaphylaxis* was a word coined by the French physiologist Charles Richet, in 1893, to describe an exaggerated immune reaction. The Greek prefix, *ana-*, conveys the meaning of backward or against. A *phylactery* is a religious object, often containing a parchment inscribed with verses from the Bible, and is similar to an amulet [ie, an object to ward off evil.]

Convalescence, meaning the gradual recovery of health, descends from the Latin, *valescere*, meaning to grow strong as in the English word, valiant.

And then there is the English word, cure, the holy grail of medicine. It is derived from the Latin, *cura*, meaning to care or to be concerned. Numerous English words descend from *cura* : manicure, pedicure, curious [in its older sense of being inquisitive or careful], secure, curate [from the Latin, *curatus*, meaning one charged with the care of the soul], curette, and even sinecure [from the Latin, *sine cura*, in its original meaning of a job without cares.] Curia [a Papal or Roman court], however, comes from the Latin, *curia*. And the English word, care, descends from an old German word meaning lamenting or feeling sorrow.

STANLEY M. ARONSON, MD



RHODE ISLAND DEPARTMENT OF HEALTH
DAVID GIFFORD, MD, MPH,
DIRECTOR OF HEALTH

VITAL STATISTICS

EDITED BY ROBERTA A. CHEVOYA, STATE REGISTRAR

Rhode Island Monthly Vital Statistics Report Provisional Occurrence Data from the Division of Vital Records

Underlying Cause of Death	Reporting Period			
	June 2004	12 Months Ending with June 2004		
	Number (a)	Number (a)	Rates (b)	YPLL (c)
Diseases of the Heart	233	3,036	283.8	4,721.5
Malignant Neoplasms	192	2,465	230.4	7,563.5
Cerebrovascular Diseases	34	521	48.7	797.5
Injuries (Accident/Suicide/Homicide)	33	455	42.5	6757.0
COPD	29	504	47.1	502.5

Vital Events	Reporting Period		
	December 2004	12 Months Ending with December 2004	
	Number	Number	Rates
Live Births	1064	13359	12.5*
Deaths	885	9921	9.3*
Infant Deaths	(2)	(67)	5.0#
Neonatal deaths	(2)	(55)	4.1#
Marriages	425	8234	7.7*
Divorces	254	3,286	3.1*
Induced Terminations	603	5,588	418.3#
Spontaneous Fetal Deaths	85	995	74.5#
Under 20 weeks gestation	(78)	(923)	69.1#
20+ weeks gestation	(7)	(72)	5.4#

(a) Cause of death statistics were derived from the underlying cause of death reported by physicians on death certificates.

(b) Rates per 100,000 estimated population of 1,069,725

(c) Years of Potential Life Lost (YPLL)

Note: Totals represent vital events which occurred in Rhode Island for the reporting periods listed above. Monthly provisional totals should be analyzed with caution because the numbers may be small and subject to seasonal variation.

* Rates per 1,000 estimated population

Rates per 1,000 live births

JUNE 1915, NINETY YEARS AGO

An Editorial urged medical inspectors to follow up on children identified with "defective vision" during school exams. The Editorial cited the example of one child, referred to the family physician. The child, diagnosed with nephritis, was next referred to an oculist, who said that glasses would not improve the child's sight. When the parents asked the teacher to move the child to the front of the classroom, the teacher refused. If the physician had followed up, s/he could have explained the reasons for the move to the teacher.

A second Editorial reported on a state law requiring that physicians attending birth "shall immediately after the birth of such infant [with reddening eyes or swelling or unnatural discharge] treat the eyes of such infant with a prophylactic remedy for the preventing of *ophthalmia neonatorum*." The Editorial said the law "means nothing, because a prophylactic remedy...is a substance which may vary in the opinion of the attending physician from water, boric acid or sulphate of zinc to nitrate of silver."

A third Editorial urged the State Board of Health to publish the minutes of their meetings. The Journal's editors were concerned with "friction among members of the State Board of Health," and advised: "If the members of the Board cannot adjust their grievances, they should resign in a body."

Harry W. Kimball, MD, in "Erythema Multiforme," described the etiology and treatment. "The prognosis of an uncomplicated case is always favorable."

JUNE 1955, FIFTY YEARS AGO

Francis J. King, MD, FACS, Francis P. Vose, MD, and Paul Cohen, MD, contributed "A Case Report and Comment" [originally presented at the Clinical-Pathological Conference at Woonsocket Hospital]. A 54 year-old man was admitted to Woonsocket Hospital with "excruciating epigastric pain and in shock." He had never had surgery, lived at home with his wife, and had no children. His symptoms occurred after he ate a meat pie for supper. "Immediately after eating he felt as though he was too full and should burp. He took a walk outside and vomited once, most of the food that he had ingested. Immediately, he felt a severe pain in his epigastrium." His wife called the family physician, who came to their house. He gave the man 1/4 grain of morphia, but the man did not improve. The physician gave another 1/8 dose 20 minutes later. When the man still did not improve, he went to the hospital. After a series of tests, the man slipped into a coma and died. The "best bet" diagnosis was that he had an acute necrotic or hemorrhagic pancreatitis." The autopsy showed that *H. Influenza* within the lungs and the pericardial sac had led to the perforation of the esophagus.

Henri E. Gauthier, MD, President of the Rhode Island

Medical Society," contributed "Meeting Our Pledges." He discussed all the professional pledges a physicians makes, to his patients, colleagues, and students.

An Editorial, "Vaccine Not the Answer," lamented the highway injuries (in 1954, 35,000 people were killed, 1,960,000 injured). The Editorial blamed the driver ("The problem starts and ends with the driver") and recommended "education of every motorist." The Editorial singled out ambulance drivers: "It is time that lovers of speed should be stopped from using the ambulance as an excuse for indulging their speed mania." The Editorial also railed against "screeching sirens."

JUNE 1980, TWENTY-FIVE YEARS AGO

This issue contained brief profiles of the 61 graduating members of the Medical School class of 1980. Eight of the students contributed essays.

Sarah M. Saklad, MD, in "Psychiatry in Rhode Island: 1725-1980," traced the expansion and improvement in psychiatric programs, touching on the Dexter Asylum, Butler Hospital, Rhode Island Hospital, Institute of Mental Health, Providence Child Guidance Clinic, Charles V. Chapin Psychiatry unit (at Providence City Hospital), Emma Pendleton Bradley Hospital. Community Mental Health Centers, and Brown Medical School's Department of Psychiatry.

Jacques M. Quen, MD, Clinical Professor of Psychiatry, New York Hospital-Cornell Medical Center, spoke at the re-dedication of Ray Hall, June 1980. The Journal printed his comments, "Remarks on Doctor Isaac Ray, (1807-1881)."

FORTHCOMING

Medicine & Health/Rhode Island

July 2005

Pathology

Guest Editor:

Ronald DeLellis, MD

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